REMARKS

In the present Amendment, in claims 28 and 30, the lower limits of the weight percentages for the respective blocks of the block copolymer have been amended. Section 112 support for the amendments to claims 28 and 30 may be found, for example, at page 24, lines 10-11 of the specification.

Claims 34-37 have been added. Section 112 support for these claims may be found, for example, at page 24, last line to page 25, line 9 of the specification.

Claim 38 has also been added. Section 112 support for claim 38 may be found, for example, in claim 10 and at page 27, lines 1-3 of the specification. Upon entry of the Amendment, which is respectfully requested, claims 1-38 will be pending.

In Paragraph No. 2 of the Action, claims 1-20 and 23-33 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mougin, U.S. Patent 6,552,146.

Applicants submit that this rejection should be withdrawn because Mougin does not disclose or render obvious the cosmetic polymer composition of the present invention.

As recited in independent claim 1, the present invention relates to a cosmetic polymer composition comprising a straight-chain block copolymer. The straight-chain block copolymer has a unit derived from a compound having an ethylenic unsaturated bond; it has a number-average molecular weight of 1.0×10^3 to 1.0×10^6; and it has two or more glass transition points or melting points. See independent claim 1.

Turning to Mougin, Applicants note the following exceptions to the Examiner's characterization of Mougin. Specifically, Applicants do not see where Mougin discloses

"carboxylic acid" as a hydrophilic monomer, contrary to the statement in the Action that the disclosed monomers "include hydrophilic monomers such as carboxylic acid...." Further, Mougin discloses polyethylene glycol(meth)acrylates as monomers, and not "polyethylene glycol" as stated in the Action. See Mougin at col. 5, lines 42-43.

As to the Examiner's reasoning in support of the rejection, Applicants, with due respect, submit that it is not persuasive. Applicants do not believe the Office has established a *prima facie* case of obviousness, and, for this reason, they respectfully traverse the rejection.

Mougin emphasizes that the polymer employed in her composition has "a highly specific ordered structure." See, e.g., Mougin's Abstract and col. 1, lines 7-8. The polymer has a "star" structure which is illustrated, in a general way, by formula (I) shown at col. 2, line 60 of Mougin. The moiety in square brackets in formula (I) of Mougin represents a polymeric chain, also known as a "branch", composed of identical or different polymerized monomers Mi having a polymerization index pj, each branch being identical or different and being grafted covalently to the center A shown in formula (I). See Mougin at col. 2, line 66 to col. 3, line 3. The symbol A in formula (I) of Mougin represents a polyfunctional center. See Mougin, at col. 2, line 62. As explained at col. 9, lines 30-36 of Mougin, the polymer has a "star" structure, which is represented by formula (I) of Mougin, in which the monomers have polymerized to give "n" alike or different polymer chains all connected to a polyfunctional center A. In contrast, present claim 1 calls for a "straight-chain block copolymer". The Examiner concedes that Mougin does not disclose a block copolymer comprising a straight-chain block copolymer. The Examiner reasons as follows:

> Although Mougin discloses a film-forming polymer having a star structure having a polyfunctional center A and at least two polymer chains=branches, it would have been obvious to one of ordinary skill in the art to consider that a cosmetic polymer composition in the present claims can also be formed from a star block copolymer having at least two polymer chains=branches such as disclosed by the Mougin invention, and to consider that each polymer chain has a block structure having at least two polymerized monomeric units.

With due respect, the Examiner's reasoning is not persuasive and is not correct from a technical standpoint. A person skilled in the art would not "consider" that a straight-chain block copolymer as called for in the present claims "can also be formed from a star block copolymer" such as disclosed by Mougin. In this regard, Mougin emphasizes, as noted, that her polymer has "a highly specific ordered structure." Her polymer has a star structure, not a straight-chain structure. It appears to Applicants that to modify the polymer of Mougin to be a straight-chain block copolymer would effectively destroy the teachings of Mougin. Further, the star polymer described in Mougin is more similar to the graft polymer or branched polymer and the branched block copolymers containing cross-linked structures described in the paragraph bridging pages 4-5 of the present specification and the first full paragraph on page 5 of the present specification, which are, in that context, being described as background art and distinguished from the straight-chain block copolymer of the present invention.

As to present claims 11 and 12, the Examiner concedes that Mougin does not disclose a polymer film having a Young's modulus within the range recited. The Examiner simply asserts that the desired Young's modulus can be obtained by selecting the polymerized monomers for obtaining the desired property. However, there is nothing in Mougin which would motivate one of ordinary skill to make the selections in question. One feature of the present invention resides in employing a copolymer capable of forming a film having a Young's modulus and a fracture-

point elongation both of which fall within certain ranges. In contrast, Mougin only focuses on the hardness of the polymer, regardless of the elongation characteristics of the polymer. Mougin does not disclose or suggest how to obtain star block copolymers, let alone a straight-chain block copolymer, having a Young's Modulus and a fracture-point elongation falling within the ranges of the present invention. Thus, Applicants believe that no one skilled in the art would have been motivated by Mougin to prepare copolymers having a Young's modulus and a fracture-point elongation both of which fall within the ranges of present claims 11 and 12.

As to present claim 20, the Examiner concedes that Mougin does not disclose a polymer containing a betaine-structured group. She asserts, however, that "it is obvious to consider that a film-forming polymer can have a betaine-structured group in the Mougin invention, because Mougin discloses wide choices of polymerizable monomers having various functional groups." Applicants respectfully submit that this is not persuasive reasoning. The Examiner has not pointed to anything in the prior art which discloses or suggests incorporating a betaine group in Mougin's polymer.

For these reasons, Applicants respectfully submit that the § 103 rejection of claims 1-20 and 23-33 based on Mougin should be reconsidered and withdrawn.

In Paragraph No. 4 of the Action, claims 1-33 are rejected for obviousness-type double patenting as allegedly being unpatentable over claims 1-18 of Hiwatashi et al, U.S. Patent 6,375,932.

Applicants submit that this rejection should be withdrawn because the subject matter of present claims 1-33 is not merely an obvious variant of the subject matter of claims 1-18 of Hiwatashi et al '932.

The Examiner concedes that claims 1-18 of Hiwatashi et al do not disclose a block copolymer having at least two glass transition points. The Examiner reasons, however, that persons skilled in the art would recognize that a hair cosmetic composition comprising a polymerizable hydrophobic unsaturated monomer and a "water-soluble polymer" [sic] "is a block copolymer having two units and having two different glass transition temperatures." Where the Examiner refers to a "water-soluble polymer" (which is element (b) of Hiwatashi), Applicants believe she meant to refer to the amine-oxide containing monomer (A) of Hiwatashi, since monomer (B) of Hiwatashi and polymer (b) of Hiwatashi do not form a polymer, let alone a block copolymer.

Monomer (A) and monomer (B) of Hiwatashi et al '932 do not inherently (i.e., necessarily) form a straight-chain block copolymer, let alone a straight-chain block copolymer which has two or more glass transition points or melting points.

The present invention is significantly distinguishable from the invention of Hiwatashi et al '932. In Hiwatashi et al '932, a straight-chain block copolymer is not specifically claimed or even disclosed. In Hiwatashi et al '932, only random copolymers containing an amine-oxide group are specifically disclosed. And in all of the examples described in Hiwatashi et al '932, random copolymers containing an amine-oxide group were employed.

In contrast, the present invention relates to a composition, comprising a straight-chain block copolymer, which is superior to a composition comprising a random copolymer containing an amine-oxide group. The superiority of the present invention over the invention claimed (and disclosed) in Hiwatashi et al '932 is understandable from the various results of Example 3 described on pages 101 to 142 in the specification of the present application. The Pc-3 copolymer, which was prepared in Exemplary Manufacture 8 described on page 83 in the original disclosure of the present application, and the Pc-4 copolymer, which was prepared in Exemplary Manufacture 9 described on page 85 in the original disclosure of the present application, are random copolymers containing an amine-oxide. From the results shown in the tables, it is understandable that the compositions, comprising the straight-chain block copolymer, for example P-4 or P-5, which fall within the scope of the present invention, were remarkably better than the compositions comprising Pc-3 or Pc-4, which fall without the scope of the present invention, regarding various characteristics such as a style-keeping ability, washability, touch feeling, styling ability and flaking. For these reasons, the present invention is significantly distinguishable from the invention claimed (and disclosed) in Hiwatashi et al '932, and the obviousness-type double patenting rejection is not proper.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the obviousness-type double patenting rejection of present claims 1-33 based on claims 1-18 of Hiwatashi et al '932.

In Paragraph No. 5 of the Action, claims 1-33 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Hiwatashi et al, U.S. Patent 6,375,932.

The Examiner states that Hiwatashi et al '932 is prior art only under 35 U.S.C. § 102(e). This appears to be incorrect. Since Hiwatashi et al '932 issued on April 23, 2002, which is earlier in time than the September 12, 2002 filing date of International Application PCT/JP/02/09338, of which the present application is a continuation, it appears to Applicants that Hiwatashi et al '932 is prior art also under 35 U.S.C. § 102(a).

STATEMENT OF COMMON OWNERSHIP:

To remove Hiwatashi et al '932 as § 102(e) prior art for purposes of § 103, Applicants submit the following statement of common ownership: the present application and Hiwatashi et al U.S. Patent No. 6,375,932 were, at the time the invention of the present application was made, commonly owned by Mitsubishi Chemical Corporation.

Hiwatashi et al '932 is prior art under § 102(a) as of its issue date of April 23, 2002. To remove Hiwatashi et al '932 as § 102(a) prior art, Applicants submit herewith sworn English translations of their first two priority documents (that is, Japanese Patent Application No. 277521/2001 filed September 12, 2001 and Japanese Patent Application No. 093943/2002 filed March 29, 2002, respectively). The priority documents support the recitations of at least present claims 1-10, 13-15, 17, 19, and 25-37 as shown in the following Table:

① = JP Appl. 2001/277521
② = JP Appl. 2002/93943

Claim	corresponding description
1	① Claim 1
2	① Claim 2
3	① Claim 3
4	① Claim 4
5	① Claim 6
6	① Claim 8
7	① Claim 10
8	① Claim 12
9	① Claim 13
10	① Claim 14
11	
12	
13	② Claim 1
14	② Claim 3
15	① paragraph [0062]~ [0067]
16	
17	① paragraph [0062]~ [0067]
18	
19	① paragraph [0062]~ [0067]
20	① paragraph [0062]~ [0067]
21	
22	
23	
24	
25	① Claim 16
26	① Claim 17
27	① paragraph [0039]
28	① paragraph [0039]
29	① paragraph [0032],[0035],[0039], examples
30	① paragraph [0032],[0035],[0039], examples
31	① paragraph [0026]
32	① paragraph [0035]
33	① Claim 13, paragraph [0042]
34	① Claim 5
35	① Claim 5
36	① paragraph [0040]
37	① paragraph [0040]

The remaining claims not addressed above are claims 11, 12, 16, 18, 20-24 and 38. Applicants submit that Hiwatashi et al '932 does not disclose or render obvious the subject matter of these claims. Hiwatashi et al '932 is silent regarding the superiority of employing a straight-chain block copolymer in comparison to employing a random copolymer containing an amine-oxide. No one skilled in the art would have been motivated by Hiwatashi et al '932 to employ a straight-chain block copolymer in place of the random copolymer containing an amine-oxide disclosed in Hiwatashi et al '932.

As to present claims 11 and 12, it has not been shown where Hiwatashi et al '932 discloses or suggests a straight-chain block copolymer capable of forming a film having a Young's modulus of 50 mPa or larger and a fracture-point elongation of 100% or larger, and dispersible into water and/or alcohol.

As to present claim 16, it has not been pointed out where Hiwatashi et al '932 discloses or suggests employing the specific cationic polymers recited in Markush form in present claim 16.

As to present claim 18, it has not been pointed out where Hiwatashi et al '932 discloses or suggests employing, in the cosmetic polymer composition, a nonionic polymer containing, as a constituent, an unsaturated monomer having one of the functional groups recited in present claim 18.

As to present claim 20, it has not been shown where Hiwatashi et al '932 discloses or suggests using an amphoteric polymer containing, as a constituent, one or more of the unsaturated monomers recited in present claim 20.

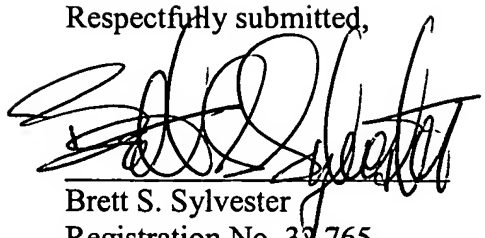
As to present claims 21-24, these claims depend from independent claim 1, directly or indirectly. As discussed previously, present claim 1 relates to a cosmetic polymer composition comprising a straight-chain block copolymer which has a unit derived from a compound having an ethylenic unsaturated bond. The straight-chain block copolymer has a number average molecular weight within a specified range, and has two or more glass transition points or melting points. As noted above and as discussed in responding to the obviousness-type double patenting rejection based on claims 1-18 of Hiwatashi et al '932, Hiwatashi et al '932 is silent regarding the superiority of employing a straight-chain block copolymer in comparison to employing a random copolymer containing an amine-oxide. A person of ordinary skill in the art would not have been motivated by Hiwatashi et al '932 to employ a straight-chain block copolymer in place of the random copolymer containing an amine-oxide disclosed in Hiwatashi et al '932.

As to new claim 38, this claim is patentable over Hiwatashi et al '932 for at least the same reasons as present claim 1, and for the additional reason that Hiwatashi et al '932 does not disclose or suggest producing the straight-chain block copolymer by a controlled radical polymerization using a halogenated sulfonyl compound as an initiator.

For these reasons, Applicants submit that the § 103 rejection of claims 1-33 based on Hiwatashi et al '932 should be reconsidered and withdrawn.

Allowance is respectfully requested.

Respectfully submitted,



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